

# ORD Animal Feeding Operation Research Index

Draft 4/8/2004

| RESEARCH AREA  | PROJECT TITLE   | LABORATORY/Contact     | MYP/LTG  | ON-GOING             | COMPLETED  |
|--|---|------------------------|----------|----------------------|------------|
| <b>AIR</b> - Stressor Characterization                       | Ammonia Emissions from Animal Husbandry Operations  | NRMRL - Bruce Harris   | PM LTG6  | FY 1997-<br>FY 2005  |            |
| <b>AIR</b> - Stressor Characterization                       | Ambient Ammonia Sensors (ETV)   | NERL - Robert Fuerst   | PP LTG3  | FY 1997 -<br>FY 2005 |            |
| <b>AIR</b> - Fate & Transport                                | Climate Change and N Deposition (link to animal waste)  | NRMRL - John T. Walker | PM LTG6  | FY 2001 -<br>FY 2005 |            |
| <b>AIR</b> - Fate & Transport                                | Fate of Atmospheric N in Agricultural Regions (including animal production)                                 | NRMRL - John T. Walker | PM LTG6  | FY 2003 -<br>FY 2005 |            |
| <b>AIR</b> - Fate & Transport and Effects Characterization   | Atmospheric Deposition and Watershed Impacts of Ammonia and other N Compounds                               | NRMRL - John T. Walker | WQ LTG4  | FY 2003 -<br>FY 2005 |            |
|  |   |                        |          |                      |            |
| <b>SURFACE &amp; GROUNDWATER</b> - Stressor Characterization | Modeling the Distribution of Nonpoint Nitrogen Sources and Sinks in the Neuse River Basin of North Carolina | NERL - Ross Lunetta    |          |                      | FY 2003    |
| <b>SURFACE &amp; GROUNDWATER</b> - Fate & Transport          | An Object-oriented Model for Nitrogen Pollutants from Swine Waste Land Application                          | NCER - Myles Morse     |          |                      | Sept. 2002 |
| <b>SURFACE &amp; GROUNDWATER</b> - Fate & Transport          | Measuring and Modeling the Source, Transport and Bioavailability of Phosphorus in Agricultural Watersheds   | NCER - Myles Morse     | ECO LTG2 | FY 2002 -<br>FY 2006 |            |
| <b>SURFACE &amp; GROUNDWATER</b> - Fate & Transport          | Emissions of N <sub>2</sub> O in North Carolina Water Bodies  | NRMRL - John T Walker  | WQ LTG4  | FY 2002 -<br>FY 2004 |            |
| <b>SURFACE &amp; GROUNDWATER</b> - Effects Characterization  | Microbial Impact of Agricultural and CAFO Activities on Surface Water Quality                               | NRMRL - Yolanda Olivas | WQ LTG3  | FY 2002 -<br>FY 2005 |            |
| <b>SURFACE &amp; GROUNDWATER</b> - Effects Characterization  | Effects of CAFOs on Ground Water Quality  | NRMRL - Steve Hutchins | WQ LTG3  | FY 2000 -<br>FY 2004 |            |
|  |   |                        |          |                      |            |

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| <b>PHARMACEUTICALS &amp; PATHOGENS</b> -<br>Stressor Characterization | Evaluation of Bioaerosols Associated with Concentrated Animal Feeding Operations (microorganism monitoring)   | NRMRL - Kim McClellan | WQ LTG3  | FY 2002 -<br>FY 2004 |            |
| <b>PHARMACEUTICALS &amp; PATHOGENS</b> -<br>Stressor Characterization | Determine Pathogen Density in Aerosols from Animal Agricultural Operations  | NRMRL - John Haines   | WQ LTG3  | FY 2005              |            |
| <b>PHARMACEUTICALS &amp; PATHOGENS</b> -<br>Stressor Characterization | Detection of Pathogens in Drinking Water (SEER 2)   | NCER - Myles Morse    |          |                      | Aug. 2002  |
| <b>PHARMACEUTICALS &amp; PATHOGENS</b> -<br>Stressor Characterization | Rapid and Sensitive Electrochemical-based Method for Improved Detection of <i>Cryptosporidium Parvum</i> in Water - Phase 1                         | NCER - Myles Morse    |          |                      | Sept. 2003 |
| <b>PHARMACEUTICALS &amp; PATHOGENS</b> -<br>Stressor Characterization | Molecular Detection of Anaerobic Bacteria as Indicator Species for Fecal Pollution in Water   | NCER - Myles Morse    |          |                      | Oct. 2002  |
| <b>PHARMACEUTICALS &amp; PATHOGENS</b> -<br>Stressor Characterization | Methods for Detection of <i>Mycobacterium Paratuberculosis</i> in Environmental Samples   | NERL - Terry Covert   |          |                      | Aug. 2002  |
| <b>PHARMACEUTICALS &amp; PATHOGENS</b> -<br>Stressor Characterization | Measurement of Endocrine Disrupting Chemicals in West Virginia's Waterways: Seasonal Comparisons for Agricultural, Industrial and Residential Areas | NRMRL - John Cicmanec | WQ LTG3  |                      | completed  |
| <b>PHARMACEUTICALS &amp; PATHOGENS</b> -<br>Stressor Characterization | Analytic Method to Monitor natural and synthetic hormones associated with risk management of CAFOs  | NRMRL - Marc Mills    | EDC LTG1 | FY 2004              |            |
| <b>PHARMACEUTICALS &amp; PATHOGENS</b> -<br>Stressor Characterization | Potential of Swine CAFOs to Contribute EDCs to Groundwater  | NRMRL - Marc Mills    | EDC LTG2 | FY 2004              |            |
| <b>PHARMACEUTICALS &amp; PATHOGENS</b> -<br>Stressor Characterization | Determine the Extent to Which CAFOs Contribute to EDCs in the Environment   | NRMRL - Marc Mills    | EDC LTG2 |                      | FY 2002    |
| <b>PHARMACEUTICALS &amp; PATHOGENS</b> -<br>Fate & Transport          | Potential of Biodegradation to Remove Hormones from Groundwater Associated with CAFOs   | NRMRL - Marc Mills    | EDC LTG1 | FY 2006              |            |

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| <b>PHARMACEUTICALS &amp; PATHOGENS</b> -<br>Fate & Transport         | Fate of CAFO EDCs Applied to Land   | NRMRL - Carl Enfield           | EDC LTG1 |                      |             |
| <b>PHARMACEUTICALS &amp; PATHOGENS</b> -<br>Fate & Transport         | Land Treatment of Biosolids/CAFO Waste (fate of pathogens, microbes, EDCs)  | NRMRL - Carol Acheson          | WQ LTG3  | FY 2003 -<br>FY 2009 |             |
| <b>PHARMACEUTICALS &amp; PATHOGENS</b> -<br>Fate & Transport         | Experimental Study of Overland Transport of <i>Cryptosporidium Parvum</i> Oocysts   | NCER - Myles Morse             |          |                      | March. 2000 |
| <b>PHARMACEUTICALS &amp; PATHOGENS</b> -<br>Fate & Transport         | Real-time PCR Method to Detect <i>Enterococcus Faecalis</i> in Water: Microbial Source Tracking   | NRMRL -<br>Jorge Santo Domingo | WQ LTG3  |                      | completed   |
| <b>PHARMACEUTICALS &amp; PATHOGENS</b> -<br>Fate & Transport         | Assessment of Equine Fecal Contamination: The Search for Alternative Bacterial Source Tracking Targets  | NRMRL -<br>Jorge Santo Domingo | WQ LTG3  |                      | completed   |
| <b>PHARMACEUTICALS &amp; PATHOGENS</b> -<br>Fate & Transport         | Detecting Fecal Contamination and its Sources in Water and Watersheds   | NCER - Myles Morse             |          |                      | Oct. 1998   |
| <b>PHARMACEUTICALS &amp; PATHOGENS</b> -<br>Effects Characterization | Endocrine Disrupting Effects of Cattle Feedlot Effluent on an Aquatic Sentinel Species, the Fathead Minnow  | NHEERL - L. Earl Gray, Jr.     |          |                      | completed   |
| <b>PHARMACEUTICALS &amp; PATHOGENS</b> -<br>Effects Characterization | Prevalence and Distribution of Genotypes of <i>Cryptosporidium Parvum</i> in Feedlots in the Western United States  | NCER - Myles Morse             |          |                      | March. 2002 |
| <b>PHARMACEUTICALS &amp; PATHOGENS</b> -<br>Effects Characterization | Workshop Proceedings on Emerging Infectious Disease Agents and Issues Associated with Animal Manures, Biosolids and Other Similar By-products                             | NRMRL - James E. Smith         | WQ LTG4  |                      | June. 2003  |
| <b>PHARMACEUTICALS &amp; PATHOGENS</b> -<br>Risk Management          | Reduction in Suspected EDCs Achievable Using Existing Manure Management Practices at CAFOs  | NRMRL - Marc Mills             | EDC LTG1 | FY 2004              |             |
| <b>PHARMACEUTICALS &amp; PATHOGENS</b> -<br>Risk Management          | Integrated EDC Field Study of EDCs from CAFOs: NERL - molecular diagnostics and analytical chemistry; NHEERL - toxicity and effects measurements; NRMRL - risk management | NRMRL - Marc Mills             | EDC LTG1 | FY 2005              |             |

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| <b>MANAGEMENT PRACTICES</b> -<br>Manure Management                        | Report on the Stressor Reduction (nitrogen, phosphorus, pathogens, EDCs, antibiotics, airborne nitrogen) Achievable Using Existing Manure Management Practices at CAFOs | NRMRL - Laurel Staley         | WQ LTG3  | FY 2004              |            |
| <b>MANAGEMENT PRACTICES</b> -<br>Manure Management                        | Arsenic Speciation Methods Applied to Studying the Environmental Fate of Organoarsenical Animal Feed Additives  | NERL - Ed Heithmar            | WQ LTG4  | FY 2000 -<br>FY 2005 |            |
| <b>MANAGEMENT PRACTICES</b> -<br>Manure Management                        | Capstone Report on Methods to Reduce Environmental Risk from Nutrients, Pathogens, and Hormones from CAFO Manure Management Practices                                   | NRMRL - Johh Haines           | WQ LTG3  | FY 2004 -<br>FY 2007 |            |
| <b>MANAGEMENT PRACTICES</b> -<br>Alternative Manure Mgnt.<br>Technologies | EPA's ETV Greenhouse Gas Technology Center (four active biogas technology verifications)  | NRMRL -<br>David Kirchgessner | PP LTG3  | FY 2002 -<br>FY 2004 |            |
| <b>MANAGEMENT PRACTICES</b> -<br>Alternative Manure Mgnt.<br>Technologies | Recycling Process for Poultry Litter - Phase I (low-temperature catalytic tertiary conversion)  | NCER - Myles Morse            |          |                      | Dec. 2001  |
| <b>MANAGEMENT PRACTICES</b> -<br>Effects Assessments                      | Soil Ecotoxicity Assays (currently on soil containing CAFO manure)  | NRMRL - Carolyn Acheson       | EDC LTG1 | FY 1997 -<br>FY 2007 |            |
| <b>MANAGEMENT PRACTICES</b> -<br>Pollution Prevention                     | Technologies Toward a Zero-discharge, Energy Efficient CAFO: Report on CAFO Pollution Prevention Opportunities and a framework for successful implementation            | NRMRL - Johnny Springer       | WQ LTG3  | FY 2003 -<br>FY 2006 |            |
| <b>MANAGEMENT PRACTICES</b> -<br>Pollution Prevention                     | Upgrading Poultry Processing Facilities to Reduce Pollution (3 volumes)   | NRMRL -<br>Thomasine Bayless  |          |                      | completed  |
| <b>MANAGEMENT PRACTICES</b> -<br>Risk Management Evaluation               | CAFO Risk Management Evaluation   | NRMRL - John Haines           | WQ LTG3  | FY 2004              |            |
| <b>MANAGEMENT PRACTICES</b> -<br>Risk Management Evaluation               | Environmental Justice Assessment of Industrial Pork Production in Mississippi and North Carolina  | NCER - Myles Morse            |          |                      | July. 2003 |